

ORNITHOLOGY.—*Bird bones from Eskimo ruins at Cape Prince of Wales, Alaska.*¹ HERBERT FRIEDMANN, U. S. National Museum.

In the summer of 1936, H. B. Collins, Jr., of the Bureau of American Ethnology, excavated a number of old Eskimo habitations in the Cape Prince of Wales area, Alaska, and collected, among other material, a large number of bird bones. All the material was carefully labeled with full stratigraphical data, thereby preserving the relative ages of the various specimens. The antiquity of the sites and the levels of the different cuttings have been estimated from archeological evidence by Collins (Smithsonian Misc. Coll. 100: 545. 1940) as follows:

The oldest site, the Sand Mound near the Light House, 2 miles north of Wales, is considered to be about 1,500 years old; a series of numbered cuts (1-10) are next in age—1,000 years, as are also the basal layers of two cuts "above A and B"; two sites named Mugisaktavik and Eyumnik are next in age, with an estimated 100-150 years; finally come a series of excavations "A, B, C, and D," assumed to be 50-100 years old.

The bulk of the material coming from the older diggings (1,000-1,500 years old) are of the Punut-Thule archeological level and are, therefore, comparable to the diggings from Ievoghiyoghameet and the upper part of Myiowaghameet at Gambell, St. Lawrence Island (reported in Journ. Washington Acad. Sci. 24: 83-96. 1934). A comparison of the present lot of bones with the Gambell series reveals some striking differences, but differences that seem to reflect dissimilarities in the bird life of the two areas, rather than in any differential human selectivity.

In the material collected on St. Lawrence Island, bones of the murre (*Uria*) were by far the most abundant elements of the bird remains, totaling about 60 percent of all the bones collected; in the Cape Prince of Wales collection only a moderate number of murre bones were found, and they were far exceeded numerically by remains of the king eider. In the former area there are cliffs that harbor breeding colonies of murre; in the latter area there are none, and it seems that this is the reason for the dissimilarity in the collections, rather than any great proclivity for murre of the St. Lawrence Eskimos, as contrasted with the Wales Eskimos. Other minor differences are noted under the separate species accounts.

The chronology of the cuttings involves only a span of not more

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than 1,500 years, and, as might be expected, it reveals no changes in the bird life of the area.

***Gavia immer* (Brünnich): Common Loon**

The common loon is represented by bones from five cuttings, ranging from the most recent (50-100 years old) to the oldest (over 1,000 years) strata. In the oldest one, eight bones representing at least three individuals were found; in the others, only single bones were collected.

***Gavia adamsi* (Gray): Yellow-billed Loon**

Five cuttings considered to be of the Puduk-Thule period (1,000 years old) each yielded a single bone of this species.

***Gavia arctica pacifica* (Lawrence): Pacific Loon**

The Pacific loon is represented by bones from nine cuts, all of the Puduk-Thule period, and also from the oldest site—a few centuries older. The largest number of bones in any one cut was three, so this species cannot be looked upon as a very frequently eaten article of diet. The actual specimens identified are five carpometacarpals, five tarsometatarsals, four humeri, two tibiotarsi, and a pair of mandibles.

***Gavia stellata* (Pontoppidan): Red-throated Loon**

Bones of this bird were collected in five cuttings, all of about 1,000 years antiquity. The bones included four tibiotarsi, one radius, one ulna, one pair of mandibles, and two coracoids.

***Puffinus tenuirostris* (Temminck): Slender-billed Shearwater**

The old cuttings (1,000 years) yielded a single humerus each of this shearwater. It would seem from this that the slender-billed shearwater was rarely eaten by the Eskimos of the area.

***Phalacrocorax pelagicus pelagicus* Pallas: Pelagic Cormorant**

Sites of all ages from 50 to 1,500 years yielded bones of this cormorant. In the oldest cut, that of the Sand Mound near the light house, were found the greatest number—three femurs, two coracoids, three ulnae, three tibiotarsi, and seven humeri; in the others the number was smaller—from one to three bones.

In a report on a similar collection of bird bones from Eskimo ruins on St. Lawrence Island (Journ. Washington Acad. Sci. 24: 88. 1934) it was noted that "although many limb bones were found, only four synsacra and one sternum were unearthed and no parts of the skull or mandibles." In the present collection, there is a similar absence of skull bones and sterna, and only one synsacrum was recovered. Inasmuch as sterna, synsacra, and skulls of other birds of similar size, especially the eider ducks, are present in numbers, together with their corresponding limb bones, it is difficult to explain their absence in the case of the cormorant.

***Branta canadensis* (Linnaeus): Canada Goose**

Bones of this species, but not certainly identifiable to subspecies, were found sparingly. Five sites yielded one bone each. The Eyumnik cut revealed a femur and in four of the excavations of Puduk-Thule area, there were unearthed two ulnae, one humerus, and one carpometacarpal.

***Branta nigricans* (Lawrence): Black Brant**

The black brant is represented in the material collected from five old (Punuk-Thule period) diggings, and from one recent (50–100 years old) one. The old sites yielded a single bone each; the recent one, two humeri.

***Philacte canagica* (Sevastianoff): Emperor Goose**

Remains of the emperor goose were found in eleven cuttings, ranging in age from the most ancient (Sand Mound—ca. 1,500 years) to those of the Punuk-Thule period (ca. 1,000 years). Strangely enough, no bones were found in the excavations of more recent sites. This is essentially similar to the St. Lawrence Island record, where no bones were found in the oldest or the most recent cuts, but only in diggings at Kialegak and Seklowaghyaget, both of Pinuk-Thule age. In the St. Lawrence Island collection, there were no long bones, but chiefly metacarpals, clavicles, and coracoids; in the present series are humeri, ulnae, femurs, sacra, metatarsals, and metacarpals.

***Anser albifrons* (Scopoli): White-fronted Goose**

The white-fronted goose is sparingly represented by bones found in six diggings of from 1,000 to 1,500 years antiquity. In all but one of these sites, only single bones were unearthed; in the one, there were two bones.

***Anas platyrhynchos platyrhynchos* Linnaeus: Common Mallard**

Considering the total absence of bones of this species in the St. Lawrence Island material, it is surprising to find the mallard abundantly represented in the present collection. No fewer than 49 bones of this duck were unearthed in 24 diggings of all ages from most ancient to most recent.

***Dafila acuta* (Linnaeus): Pintail**

Four cuttings of Punuk-Thule age yielded one bone each of this duck. It was even scarcer in the St. Lawrence Island collection, where only a single bone was unearthed in a cut of comparable age.

***Nyroca marila* (Linnaeus): Greater Scaup Duck**

Fifteen diggings yielded 25 bones of this duck (tibiotarsi, humeri, and ulnae).

***Glaucionetta clangula* (Linnaeus): Goldeneye**

A few bones of this species were found in two cuttings of about 1,000 years of age. The subspecific identification is impossible even to guess at, as either the Asiatic or the American form might occur in the region.

***Clangula hyemalis* (Linnaeus): Oldsquaw**

The oldsquaw is represented by 26 bones from 15 different diggings, all but one recent one of Punuk-Thule age. This is in agreement with the record of the species in the collection from St. Lawrence Island.

***Polysticta stelleri* (Pallas): Steller's Eider**

Unlike the St. Lawrence Island material, where this duck was poorly represented, the present collection contains 30 bones from 20 sites. With two exceptions (both recent sites) all the diggings involved were of Punuk-Thule age. The number of bones varied from one to nine in any single site.

Somateria v-nigra Gray: Pacific Eider

The Pacific eider is very abundantly represented in the present collection, 107 bones from 35 diggings being identified as of this species. All ages, from 50 to 1,500 years, are presented in the cuttings involved.

Somateria spectabilis (Linnaeus): King Eider

The most abundant species in the collection, no less than 188 bones from 60 diggings being of this eider. These diggings cover the entire time range of from 50 to 1,500 years antiquity.

Melanitta deglandi (Bonaparte): White-winged Scoter

The white-winged scoter is represented by 18 bones from eight diggings, all of the Punuk-Thule period. The bones include humeri, tibiotarsi, and sterna.

Oidemia americana Swainson: American Scoter

Eight bones of this duck were unearthed in four cuttings, two of which were of recent date and two of Punuk-Thule age.

Lagopus sp.: Ptarmigan

Eight bones (seven humeri and one metacarpal) from as many cuttings, all but one (recent) of Punuk-Thule age, are here recorded together. Probably two species, the rock ptarmigan, *Lagopus rupestris* subsp., and the Alaska ptarmigan, *Lagopus lagopus alascensis* Swarth, are represented, but it is not possible to identify them with absolute certainty.

Grus canadensis canadensis (Linnaeus): Little Brown Crane

Four diggings of the Punuk-Thule level revealed bones (one in each) of the little brown crane. The bones were a skull, two fragmentary tibiotarsi, and a tarsometatarsus.

Stercorarius pomarinus (Temminck): Pomarine Jaeger

The absence of jaeger bones in this collection is noteworthy by contrast with their abundance in the St. Lawrence Island material. Whereas in the latter collection, there were large numbers of bones of the long-tailed jaeger and a few remains of the parasitic jaeger, the Cape Prince of Wales excavation yielded only three tibiotarsi of the pomarine jaeger, all from one cutting of Punuk-Thule age.

Larus hyperboreus Gunnerus: Glaucous Gull

Eleven cuts of all ages from 50 to 1,500 years yielded bones (one in each case) of this large gull. The bones included metacarpals, humeri, mandibles, tarsometatarsi, and tibiotarsi.

Larus glaucescens Naumann: Glaucous-winged Gull

Bones of this gull were found in only two of the cuttings of Punuk-Thule age. The excavation at Eyumnik yielded two metacarpals and a femur; the other (cut 8), one tibiotarsus.

Larus argentatus subsp.: Herring Gull

The most abundantly represented gull. Twenty-five bones from 16 diggings are identified as of this species; the diggings covering the entire time range of from 50 to 1,500 years.

Rissa tridactyla pollicaris Ridgway: Pacific Kittiwake

In three diggings, one recent and two of Punuk-Thule age, were found bones of the Pacific kittiwake (one bone—a humerus, in each case).

Xema sabini (Sabine): Sabine's Gull

Sabine's gull is poorly represented in the collection, only two tibiotarsi being identified. These came from two cuts of Punuk-Thule age.

Sterna paradisaea Brunnich: Arctic Tern

The Arctic tern is represented by a humerus and an ulna from a cutting of Punuk-Thule age. Judging by its absence in all the other cuttings, one may surmise that it was very infrequently eaten.

Uria spp.: Murres

Murres, probably of two species, *Uria lomvia arra* (Pallas) and *Uria aalge californica* (Bryant), are represented by 104 bones found in 38 cuttings of all ages from 50 to 1,500 years. The most striking contrast between the present collection and that from St. Lawrence Island is the relative abundance of murre bones. In the latter, murre bones comprised a little more individual bones than all the other species combined; in the present collection, no such outstanding preponderance is true, in fact, murre bones are greatly outnumbered by king eider and also by Pacific eider. Undoubtedly, the reason for this is that on St. Lawrence Island, there are many cliffs where the murres nest, while in the Cape Prince of Wales area there are no such formations and hence murres are not only less numerous but also harder to catch than where they can be snared at the nest.

The greatest number of murre bones from any one digging is from the oldest site—Sand Mound near the Light House, where eleven humeri, one femur, two coracoids, two metacarpals, eight ulnae, and three tibiotarsi were unearthed; the next most productive cut, one of Punuk-Thule age, yielded one skull, two sterna, two pairs of mandibles, two synsacra, two humeri, two ulnae, one coracoid, and three tibiotarsi. In the cuts of recent age, the number of murre bones (where found) is from three to six. It follows that the Eskimos of Cape Prince of Wales did not feed on murres to anything like the extent that the St. Lawrence Islanders did.

Cephus columba Pallas: Pigeon Guillemot

The pigeon guillemot is represented by nine bones (all femurs!) from three cuttings of Punuk-Thule age.

Cyclorhynchus psittacula (Pallas): Paroquet Auklet

Three diggings, two of Punuk-Thule age, and one recent one, revealed bones (one in each case) of the paroquet auklet. This is in striking contrast to the abundance of remains of this species in the St. Lawrence Island collection.

Aethia cristatella (Pallas): Crested Auklet

Of this auklet, 47 bones were gathered from 27 different cuttings. While most of the bones were humeri, there were also sterna, coracoids, and clavicles.

Aethia pusilla (Pallas): Least Auklet

Fourteen diggings, all but one of Punuk-Thule age, and one recent one,

contained bones of the least auklet, 29 in all, including humeri, sterna, coracoids, and metacarpals.

Fratercula corniculata (Naumann): Horned Puffin

A single humerus from a cutting of Pুনuk-Thule age is the only bone of the horned puffin found in the collection. The scarcity of remains of this species and the next one may not necessarily indicate the numerical status of the two species in the area, as on St. Lawrence Island, "in spite of their abundance and size, neither of the puffins . . . seems to have figured very largely in the diet of the ancient Eskimos" (Journ. Washington Acad. Sci. 24: 96. 1934).

Lunda cirrhata (Pallas): Tufted Puffin

The tufted puffin is represented by five bones from two excavations of Pুনuk-Thule age.

Nyctea nyctea (Linnaeus): Snowy Owl

A single coracoid from a recent site (50-100 years old) is the only bone of this species in the collection. As on St. Lawrence Island, owls may not have been looked upon as food.

Corvus corax principalis Ridgway: Northern Raven

Two raven bones, one from the oldest site (1,500 years) and one of Pুনuk-Thule age (1,000 years) are all that represent this bird. However, this is due not to the scarcity of the raven but to the taboos regarding killing it. Not a single raven bone was found in the refuse mounds on St. Lawrence Island, where the raven is a common bird.

ICHTHYOLOGY.—*The gobies Waitea and Mahidolia*.¹ HUGH M. SMITH, U. S. National Museum.

The two gobioid genera *Waitea* and *Mahidolia*, with a rather wide distribution in the Oriental and South Pacific regions (Philippine Islands, Samoan Islands, Java, and Thailand or Siam), have become somewhat involved in the literature, and it seems desirable, with the information and material now available, to attempt a clarification of their status. These genera are similar in possessing a pronounced backward extension of the jaws, but their general appearance is different and taxonomically they are quite distinct.

Genus **Waitea** Jordan and Seale

Jordan and Seale (1906) established *Waitea* as a new genus of gobies and indicated *Gobius mystacinus* Cuvier and Valenciennes (1837) as the genotype. No description of the genus was given except that it was close to *Gobionellus* but had the maxillaries produced backward as in *Opisthognathus*. Beyond the mere listing of *Waitea mystacina* (Cuvier and Valenciennes) as being known from Samoa and Java,

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